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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,566	03/29/2004	Tsau-Hua Hsieh		3672

25859 7590 07/11/2005

WEI TE CHUNG
FOXCONN INTERNATIONAL, INC.
1650 MEMOREX DRIVE
SANTA CLARA, CA 95050

EXAMINER

CALEY, MICHAEL H

ART UNIT PAPER NUMBER

2871

DATE MAILED: 07/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/812,566

Applicant(s)

HSIEH ET AL.

Examiner

Michael H. Caley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>03292004</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Objections

Claims 16-19 are objected to because of the following informalities: Improper numbering. Claim at bottom of page 11 should be renumbered from 14 to read as claim 16. Likewise, claims currently numbered as 15-17 of page 12 should be renumbered to read as claims 17-19. Claim dependencies should also be amended so as to refer to correct claim numbers. Appropriate correction is required.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3, 9-12, 17, and 18 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of copending Application No. 10/812,818. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-3, 9-12, 15, and 16 of application 10/812,566 are anticipated by claims 1-17 of application 10/812,818.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, 6, 8, and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Park (U.S. Patent No. 5,949,511).

Regarding claim 1, Park discloses an IPS liquid crystal display having:

a first substrate (Figure 4A element 111);

a second substrate (Figure 4A element 110) opposite to the first substrate;

a liquid crystal layer (Figure 4A element 119) disposed between the two substrates;

a plurality of common electrodes (Figure 4A element 106A) and pixel electrodes (Figure 4A element 105A) disposed on the second substrate;

a plurality of spacers (Figure 4A element 130) disposed on the common electrodes and the pixel electrodes;

wherein the spacers are electrically conductive (Column 3 lines 40-43).

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Regarding claim 5, Park discloses the spacers as having a circular cross-section (Figure 4A element 130).

Regarding claim 6, Park discloses the spacers as made of metal (Column 5 lines 40-41).

Regarding claim 8, Park discloses a plurality of counter electrodes (Figure 4A elements 105B and 106B) disposed between the spacers and the first substrate.

Regarding claim 17, Park discloses the spacers as located between the first and second substrates and surrounding the liquid crystal layer (Figure 4A); and an alignment film (Figure 4A element 121A) located above the second substrate and under the liquid crystal layer, and horizontally among the spacers.

Regarding claim 18, Park discloses the common electrodes and pixel electrodes as located between the corresponding spacers and one of the first and second substrates (Figure 4A).

Regarding claim 19, Park discloses the counter electrodes as located between the corresponding spacers and the other of the first and second substrates.

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Shimoshikiryo et al. (U.S. Patent No. 6,130,739 "Shimoshikiryo").

Park discloses all of the proposed limitations except for the spacers as having a rectangular cross-section. Shimoshikiryo, however, teaches the spacers as having a rectangular cross-section such that the spacer creates a transverse field across the length of the pixel electrode and common electrode (Figures 6-8 elements 603 and 604).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the spacers disclosed by Park to have a rectangular cross-section as proposed. One would have been motivated to shape the spacers as taught by Shimoshikiryo to benefit from a lower driving voltage due to a higher transverse electric field strength (Column 28 lines 21-40). A lower driving voltage would have been beneficial to increase the driving efficiency of the display.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Shimoshikiryo and in further view of Yano et al. (U.S. Patent No. 6,108,068 "Yano").

Park as modified by Shimoshikiryo discloses all of the proposed limitations except for the spacers as made of an anisotropic conductive film. Yano, however, teaches such a film for

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forming a spacer capable of bonding the first and second substrate in an electroconductive state (Figures 5 and 7; Column 4 lines 1-34).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the spacer from an anisotropic conductive film as proposed. One would have been motivated to form the spacer from an anisotropic conductive film to aid in fixing the substrate and reduce flicker (Column 1 lines 35-64, Column 4 lines 50-60).

Claims 7, 9, 13, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Yano.

Regarding claim 7, Park discloses all of the proposed limitations except for the spacers as made of an anisotropic conductive film. Yano, however, teaches such a film for forming a spacer capable of bonding the first and second substrate in an electroconductive state (Figures 5 and 7; Column 4 lines 1-34).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the spacer from an anisotropic conductive film as proposed. One would have been motivated to form the spacer from an anisotropic conductive film to aid in fixing the substrate and reduce flicker (Column 1 lines 35-64, Column 4 lines 50-60).

Regarding claims 9, 13, and 16 Park discloses all of the proposed limitations except for the spacers as having a spacer body and an electrically conductive film. Yano, however, teaches such a spacer construction for forming a spacer capable of bonding the first and second substrate

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in an electroconductive state (Figures 5 and 7; Column 4 lines 1-34) while having a spacer portion having high hardness for determining the liquid crystal thickness (Column 3 lines 59-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the spacer from an anisotropic conductive film as proposed. One would have been motivated to form the spacer from an anisotropic conductive film to aid in fixing the substrate and reduce flicker (Column 1 lines 35-64, Column 4 lines 50-60).

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Yano and in further view of Shimoshikiryo.

Park as modified by Yano discloses all of the proposed limitations except for the spacers as having a rectangular cross-section. Shimoshikiryo, however, teaches the spacers as having a rectangular cross-section such that the spacer creates a transverse field across the length of the pixel electrode and common electrode (Figures 6-8 elements 603 and 604).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the spacers disclosed by Park to have a rectangular cross-section as proposed. One would have been motivated to shape the spacers as taught by Shimoshikiryo to benefit from a lower driving voltage due to a higher transverse electric field strength (Column 28 lines 21-40). A lower driving voltage would have been beneficial to increase the driving efficiency of the display.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Yano and Shimoshikiryo and in further view of Shimizu et al. (U.S. Patent No. 4,390,245 "Shimizu").

Park as modified by Yano and Shimoshikiryo fails to disclose the spacer body as made of glass. Yano teaches the spacer body as having a comparatively high hardness to decide the thickness of the liquid crystal layer (Column 3 lines 59-67). Shimizu further teaches glass as a preferable hard material to decide the thickness of the liquid crystal layer (Column 2 lines 37-43).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used glass as the spacer body material in the display device disclosed by Park. One would have been motivated to use a glass spacer body due to its recognized ability to define and maintain a distance between substrates and thus determine the thickness of the liquid crystal layer (Shimizu, Column 2 lines 65-66).

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Yano and Shimoshikiryo and in further view of Matsumoto (U.S. Patent No. 6,657,699).

Park as modified by Yano and Shimoshikiryo fails to disclose the conductive film as comprising indium tin oxide. Matsumoto, however, teaches indium tin oxide as an acceptable spacer conductive film material in an analogous display (Column 20 lines 40-46; Figure 26 element 9C).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used indium tin oxide as the spacer conductive film in the display device

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disclosed by Park. One would have been motivated to use indium tin oxide given the electrode location within the active region due to its transparent characteristic. Such a feature would have been beneficial to increase the aperture ratio and efficiency of the display.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Yano and in further view of Shimizu et al. (U.S. Patent No. 4,390,245 "Shimizu").

Park as modified by Yano fails to disclose the spacer body as made of glass. Yano teaches the spacer body as having a comparatively high hardness to decide the thickness of the liquid crystal layer (Column 3 lines 59-67). Shimizu further teaches glass as a preferable hard material to decide the thickness of the liquid crystal layer (Column 2 lines 37-43).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used glass as the spacer body material in the display device disclosed by Park. One would have been motivated to use a glass spacer body due to its recognized ability to define and maintain a distance between substrates and thus determine the thickness of the liquid crystal layer (Shimizu, Column 2 lines 65-66).

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Yano and in further view of Matsumoto (U.S. Patent No. 6,657,699).

Park as modified by Yano fails to disclose the conductive film as comprising indium tin oxide. Matsumoto, however, teaches indium tin oxide as an acceptable spacer conductive film material in an analogous display (Column 20 lines 40-46; Figure 26 element 9C).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used indium tin oxide as the spacer conductive film in the display device disclosed by Park. One would have been motivated to use indium tin oxide given the electrode location within the active region due to its transparent characteristic. Such a feature would have been beneficial to increase the aperture ratio and efficiency of the display.

Contact Information

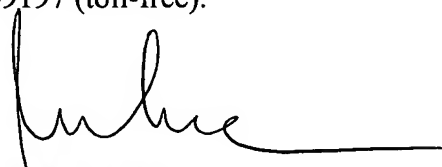
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael H. Caley whose telephone number is (571) 272-2286. The examiner can normally be reached on M-F 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael H. Caley
July 7, 2005

mhc
mhc


DUNG T. NGUYEN
PRIMARY EXAMINER